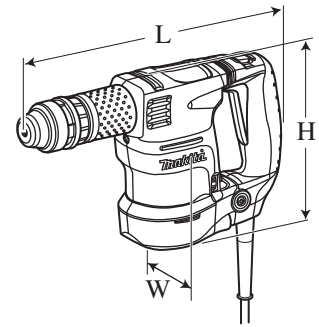


Models No. ▶ HK1820

Description ▶ Power Scraper


CONCEPT AND MAIN APPLICATIONS

Model HK1820 has been developed as the successor model of HK1810, featuring vibration absorbing handle additionally to the same compact and lightweight design as the predecessor model. Also features the chuck adapted for SDS-PLUS bits.

Dimensions: mm (")	
Length (L)	351 (13-3/4)
Width (W)	102 (4)
Height (H)	203 (8)

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
110	5.3	50/60	550	260	390
120	5.0	50/60	---	260	390
220	2.6	50/60	550	260	390
230	2.5	50/60	550	260	390
240	2.4	50/60	550	260	390

Impacts per min: ipm=min ⁻¹	0 - 3,200	
Shank type: mm (")	SDS-Plus	
Impact energy [catalog value]: J	3.9	
Variable speed control	by trigger	Yes
	by dial	Yes
Protection from electric shock	Double insulation	
Power supply cord: m (ft)	Chile, Brazil: 2m (6.6ft) Other countries: 5m (16.4ft)	
Net weight: kg (lbs)	3.3 (7.3)	

► Standard equipment

- Bull point 1
- Scaling chisel 1
- Scaling chisel (for tile) 1
- Hook complete 1
- Plastic carrying case 1

Note: The standard equipment for the tool shown above may differ by country.

► Optional accessories

- | | |
|---------------------------|--|
| Bull points | Hook complete |
| Cold chisel | Scraper assembly |
| Grooving chisels | Grease vessel (containing Hammer grease) |
| Scaling chisel | Bit grease |
| Scaling chisel (for tile) | Safety goggles |

► Repair

CAUTION: Remove the bits from the machine for safety before repair/maintenance in accordance with the instruction manual!

[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R003	Retaining ring pliers ST-2N	Removing/mounting Ring spring
1R022	Bearing plate	Stabilizing Bearing box when removing Ball bearing 6002LLU
1R023	Pipe ring	Stabilizing Crank housing complete when removing Armature
1R029	Bearing setting pipe 23-15.2	Removing Oil seal 15 and Ball bearing 6002LLU from Bearing box
1R212	Tip for retaining ring pliers	Removing/mounting Ring spring (for modular use with 1R003)
1R225	Bearing extractor	Removing Armature and Ball bearing 6001DDW from Crank housing comp.
1R228	1/4" Hex shank bit for M4	Removing M4x25 Hex socket head bolt from Crank housing cover
1R229	1/4" Hex shank bit for M5	Removing M5x25 Hex socket head bolt from Barrel
1R258	V Block	Stabilizing Bearing box when removing Helical gear 36
1R288	Screwdriver magnetizer	Magnetizing Screwdriver when removing Steel balls and Pins

[2] LUBRICATION

Apply the following lubricants to protect parts and product from unusual abrasion:

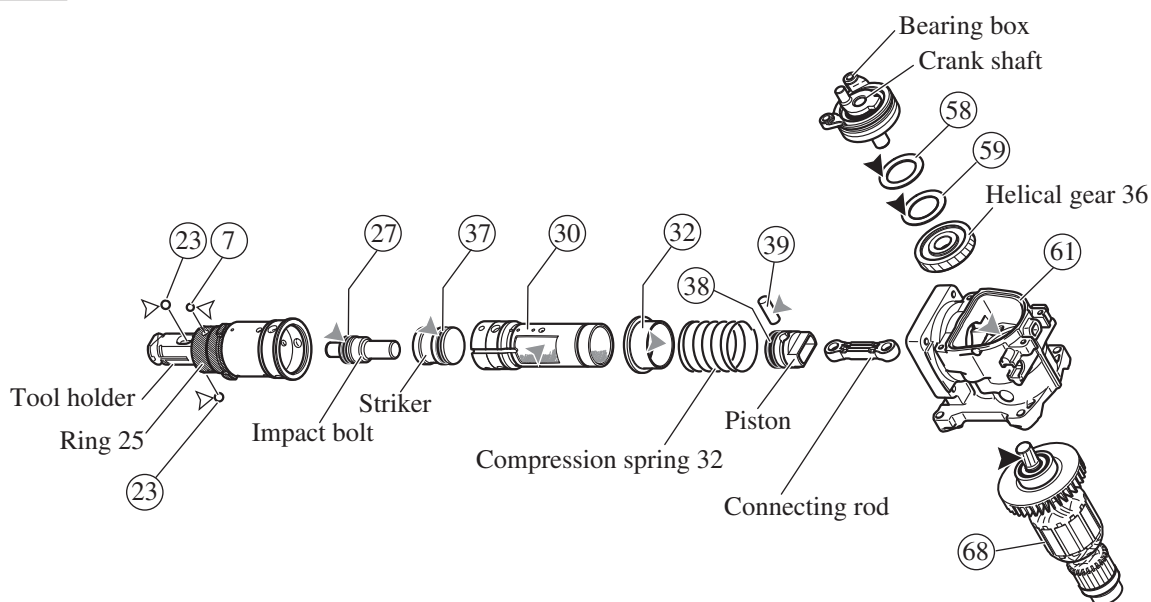
*Makita grease N.No.1 to the portions designated with **black triangle**

*Makita grease R.No.00 to the portions designated with **gray triangle**

*Makita grease N.No.2 to the portions designated with **white triangle**

Item No.	Description	Portion to lubricate	Lubricant	Amount
⑦	Steel ball 4.8 (3 pcs)	Whole portion	Makita grease N.No.2	a little
②③	Steel Ball 7.0 (2 pcs)	Whole portion		
②⑦	O Ring 12	Whole portion	Makita grease R.No.00	a little
③①	Cylinder	Inside surface that Piston and Striker contacts		3g
③②	Ring 29	Inside periphery that contacts ③① Cylinder		a little
③⑦	O Ring 18 on Striker	Whole portion		
③⑧	O Ring 18 on Piston	Whole portion		
③⑨	Pin 7	Cylindrical surface that contacts Connecting rod		
⑥①	Crank housing complete	Crank room	17g	
⑤⑧⑤⑨	Flat washer 22	Whole portion for smooth rotation of Helical gear 36	Makita grease N.No.1	a little
⑥⑧	Armature	Gear portion for smooth rotation of Helical gear 36		4g

Fig. 1



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Chuck Section

DISASSEMBLY

Disassemble the Chuck section as described in **Figs. 2 and 3.**

Fig. 2

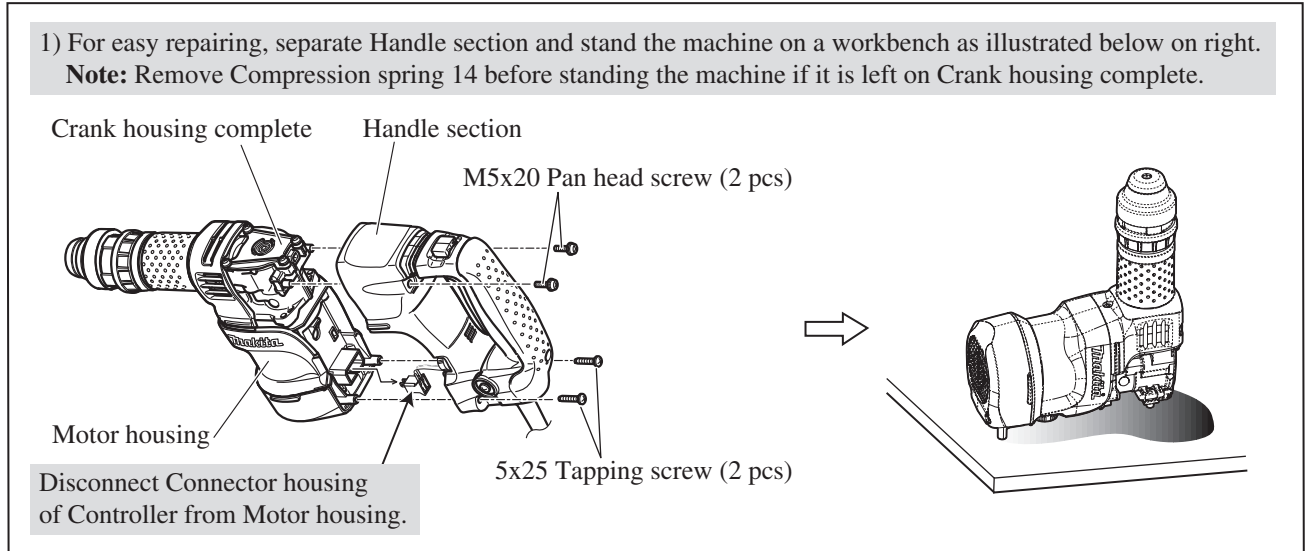
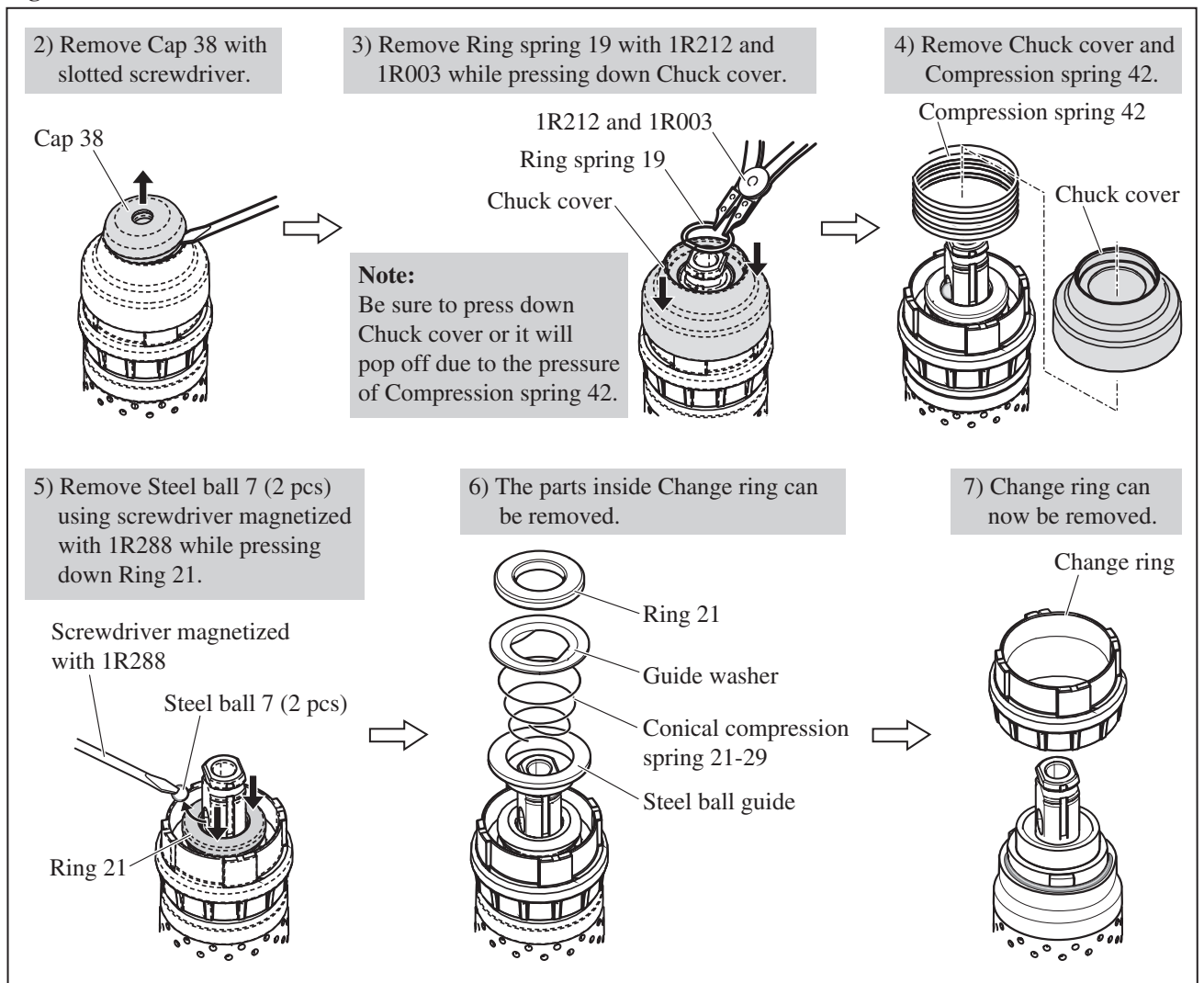


Fig. 3



DISASSEMBLY

Do the reverse of the disassembling steps.

► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -2. Barrel, Tool Holder, Cylinder Section

DISASSEMBLY

- 1) Disassemble the Chuck section as described in **Figs. 2, 3.**
- 2) Disassemble Tool holder, Ring 25 and Cylinder section from Barrel as described in **Figs. 4, 5, 6.**

Fig. 4

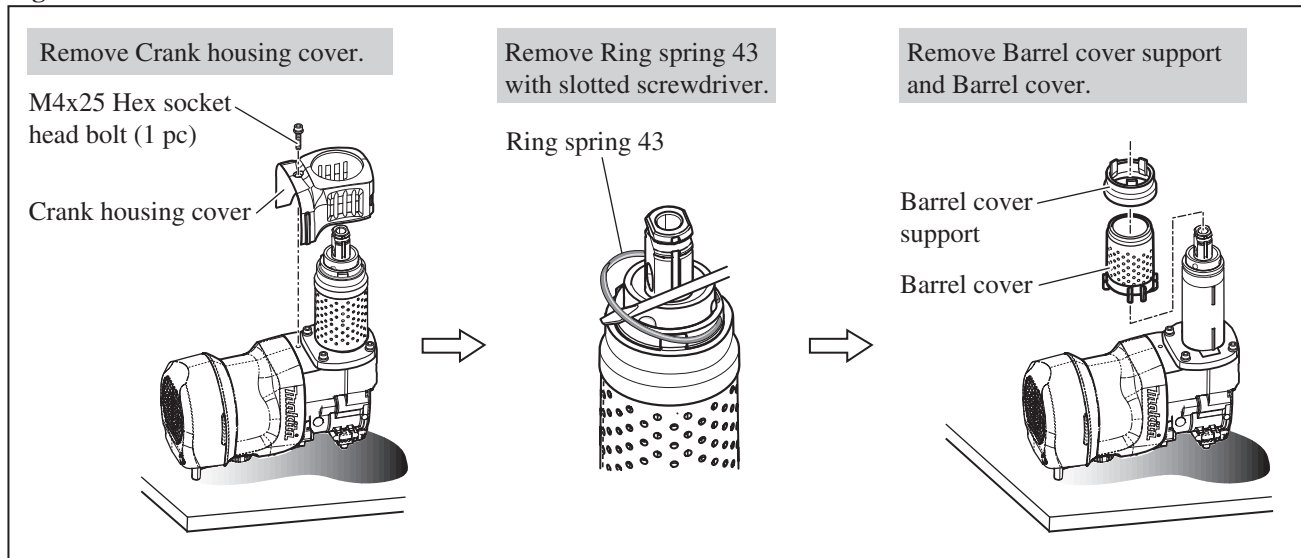


Fig. 5

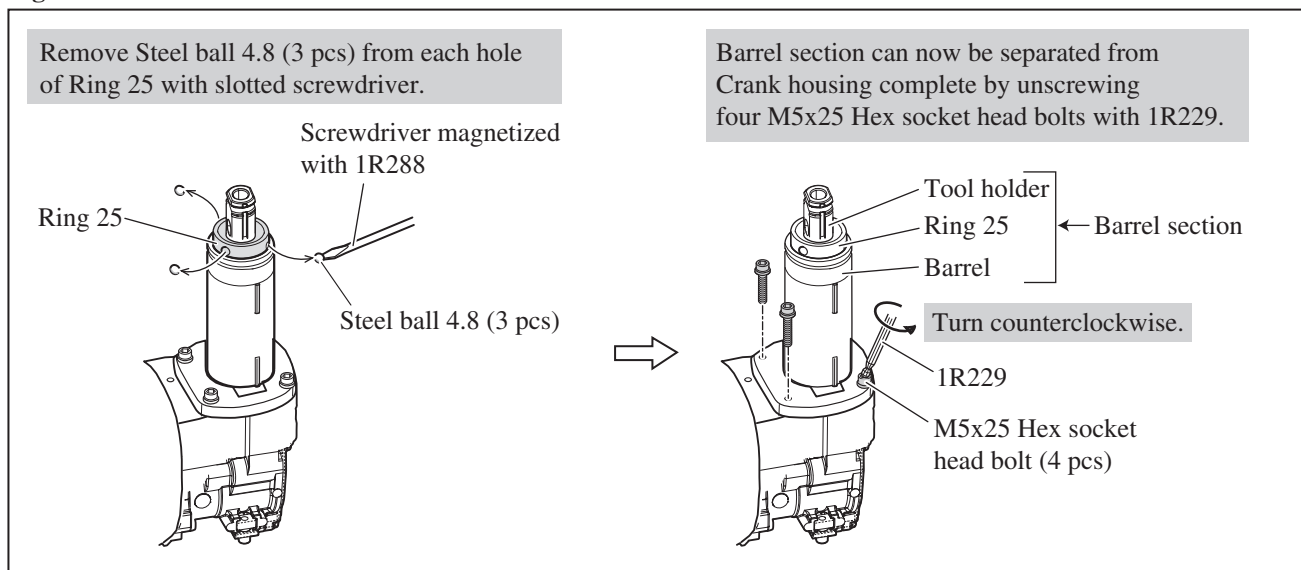
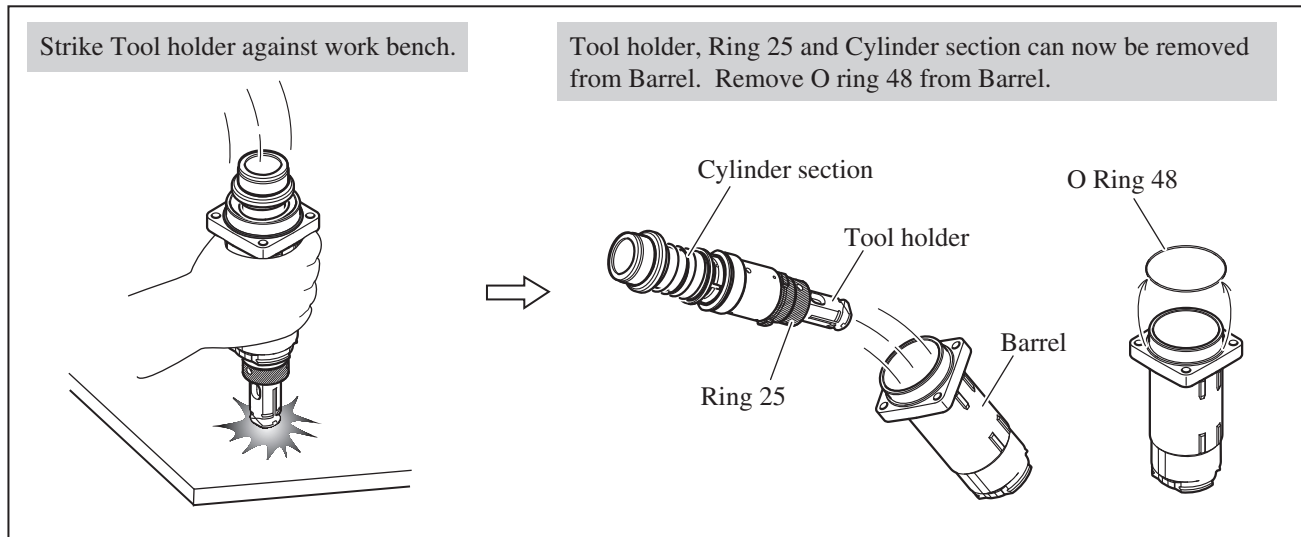


Fig. 6



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -2. Barrel, Tool Holder, Cylinder Section

DISASSEMBLY

- 3) Separate Tool holder from Cylinder section as described in **Fig. 7**.
- 4) Disassemble Impact bolt and Cylinder section as described in **Fig. 8**.

Fig. 7

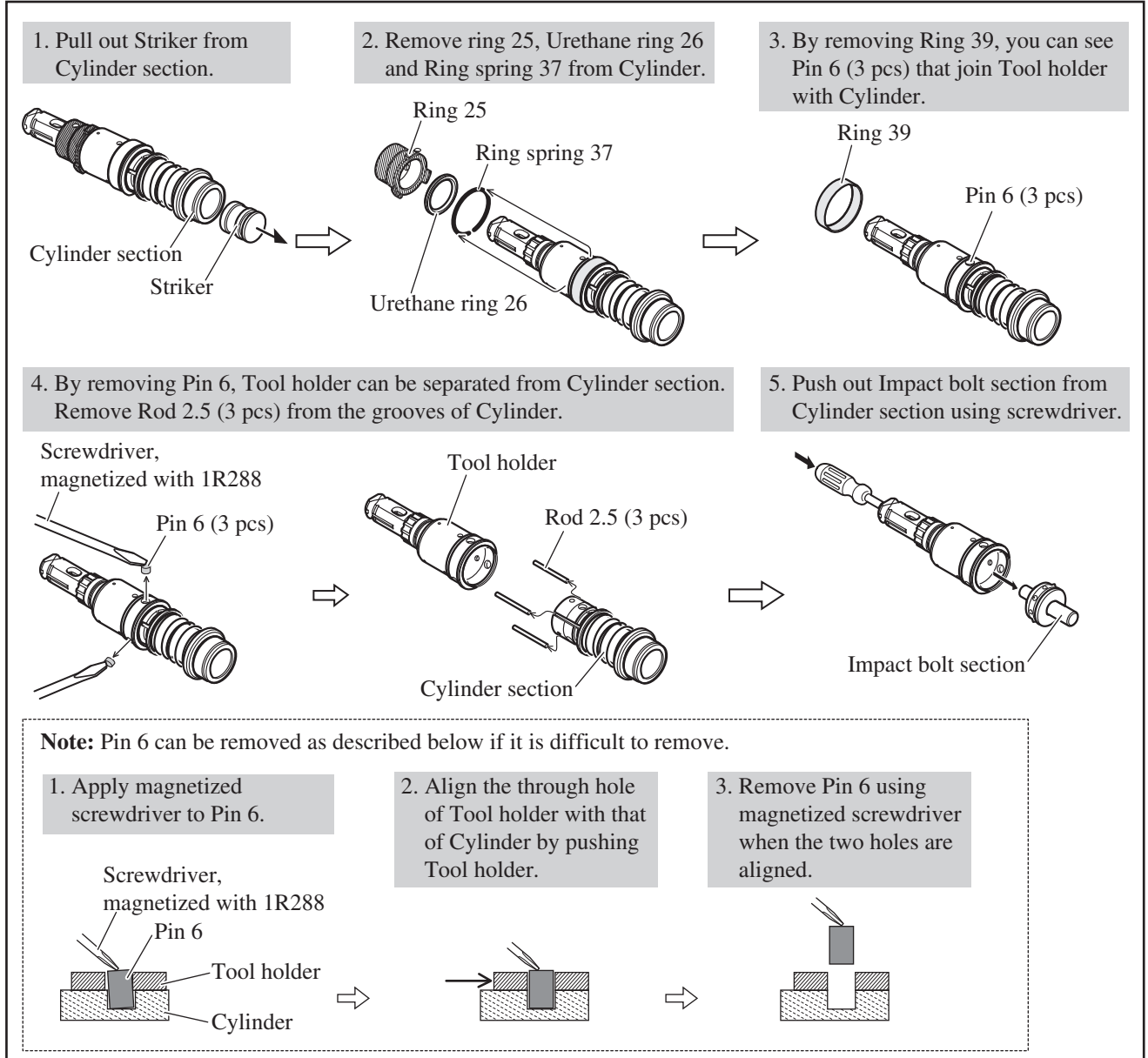
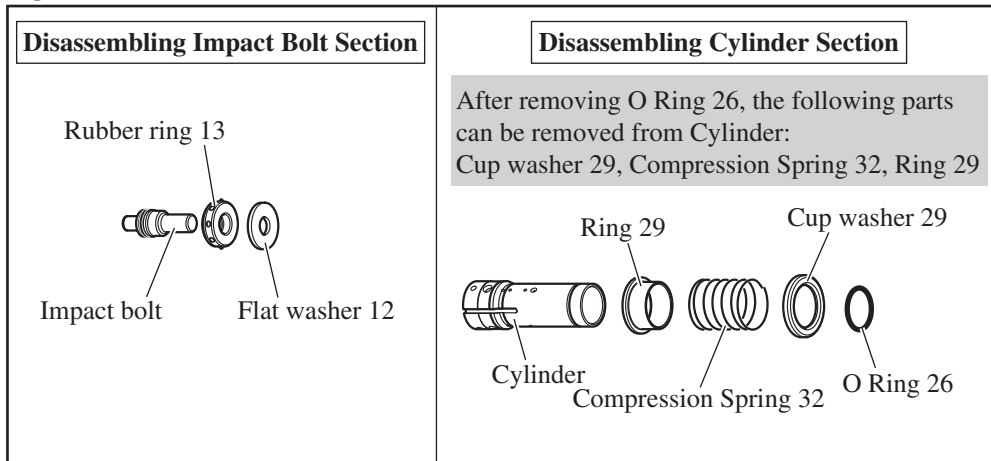


Fig. 8



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -2. Barrel, Tool Holder, Cylinder Section

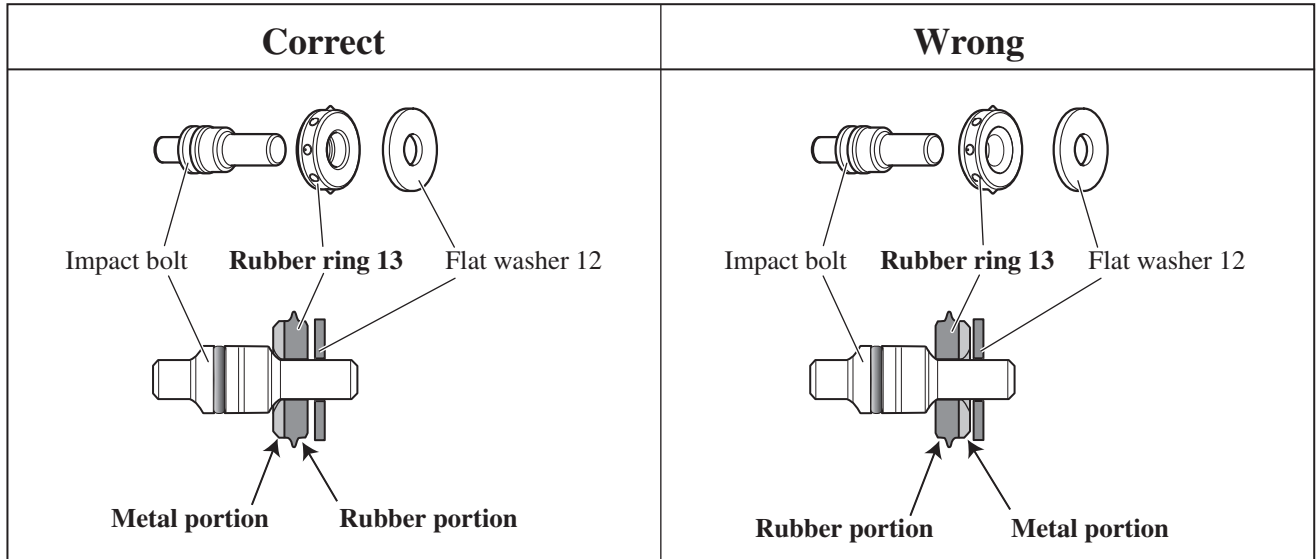
ASSEMBLY

Do the reverse of the disassembling steps.

Note: Rubber ring 13 is directional when assembled to Impact bolt.

Be sure to assemble as illustrated to left in **Fig. 9**.

Fig. 9



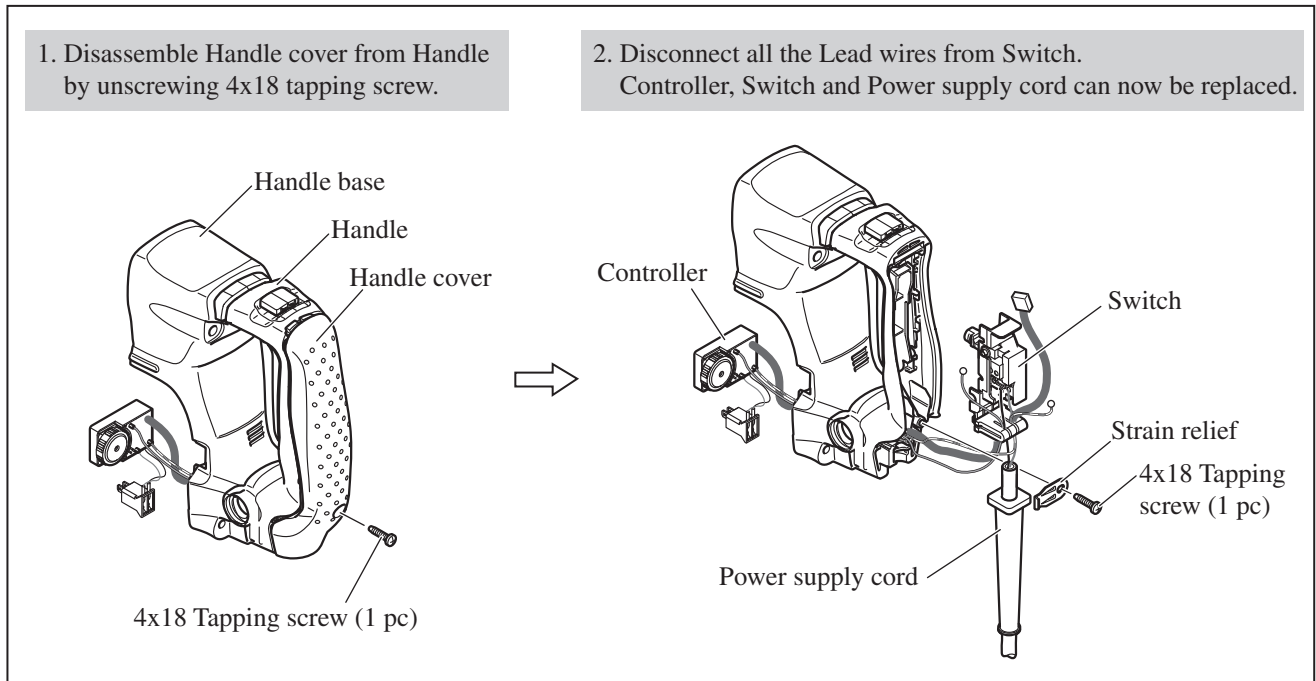
[3] -3. Electrical Parts in Handle Section

DISASSEMBLY

1) Disassemble Handle section as described in **Fig. 2**

2) The electrical Parts can be replaced as described in **Fig. 10**.

Fig. 10



ASSEMBLY

Do the reverse of the disassembling steps.

► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -4. Motor Section

DISASSEMBLY

- 1) Disassemble Handle section as illustrated in **Fig. 2**
- 2) Separate the contact of Carbon brushes from Commutator as described in **Fig. 11**.
- 3) Disassemble Crank housing complete from Motor housing as illustrated in **Fig. 12**.
- 4) Remove Piston from Crank shaft as illustrated in **Fig. 13**.

Fig. 11

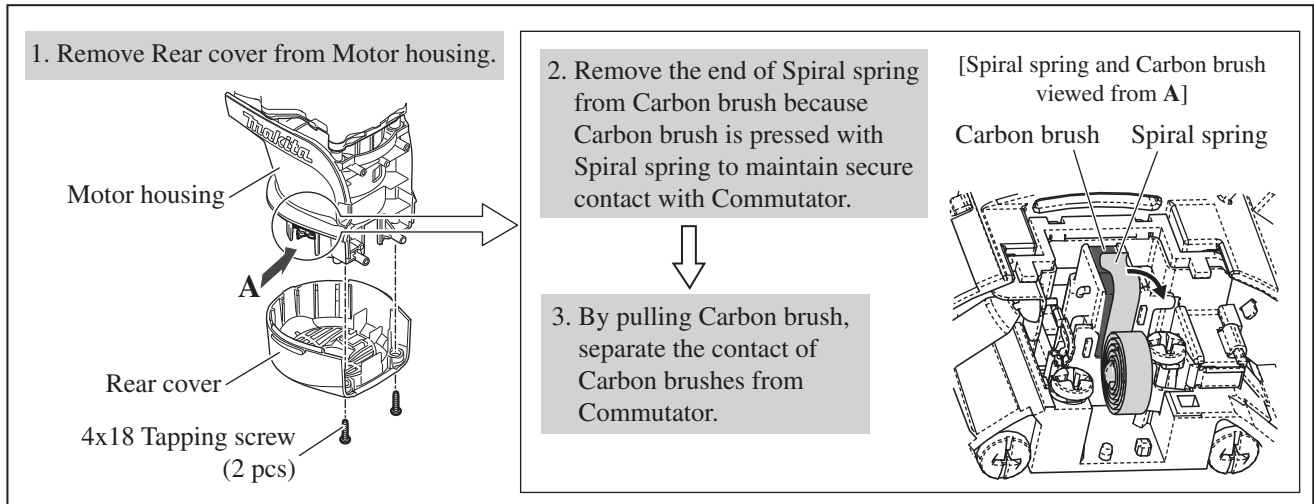


Fig. 12

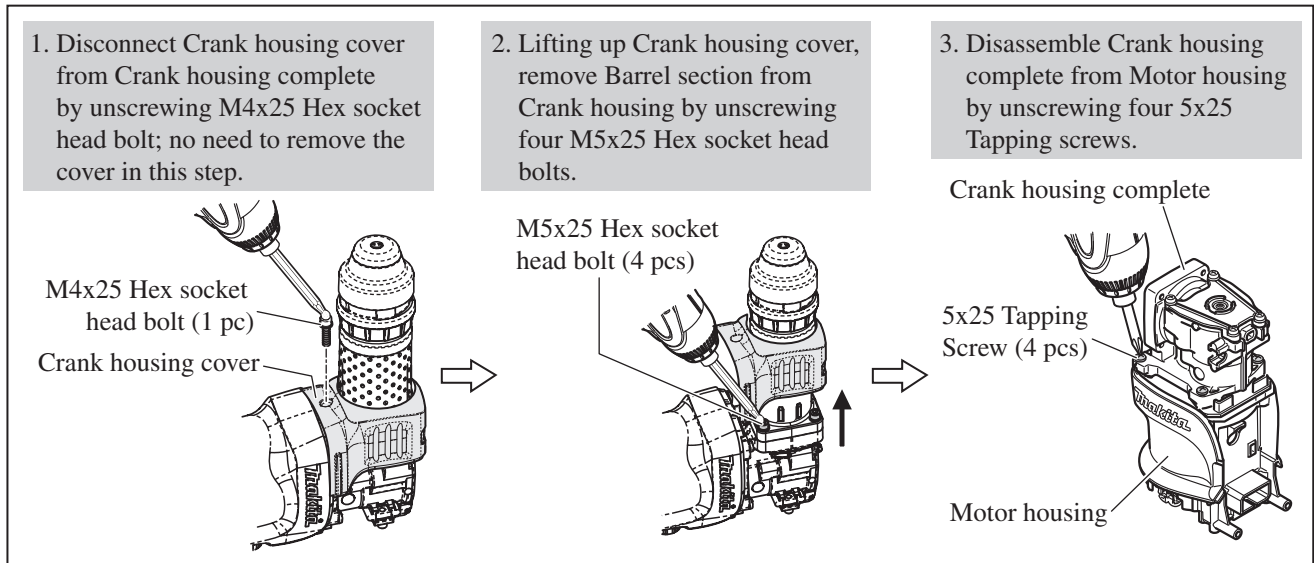
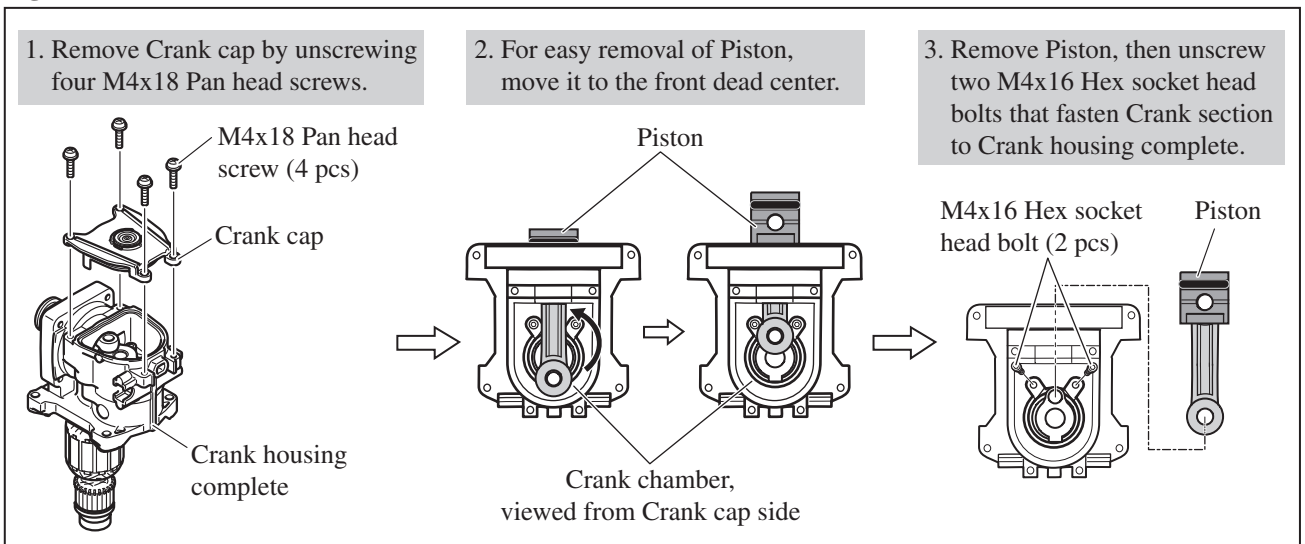


Fig. 13



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -4. Motor Section

DISASSEMBLY

- 5) Remove Crank section from Crank housing complete by tapping Crank housing complete with plastic hammer. (Fig. 14)
- 6) Remove Armature from crank housing complete using 1R023, 1R225 and arbor press as described in Fig. 15.

Fig. 14

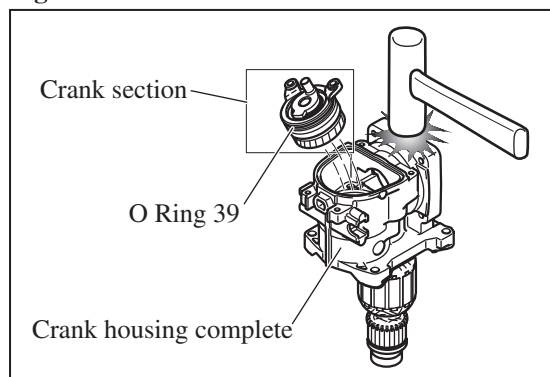


Fig. 15

1. Set Crank housing complete on 1R023, and apply the thin end of 1R225 to Armature shaft. Then press down 1R225 using arbor press until it stops.

2. Turn over 1R225, and fit the pin on the thick end of 1R225 in the inner race of Ball bearing 6001DDW. Armature can now be removed by pressing down 1R225 using arbor press.

[Cross-sectional view]

[Cross-sectional view]

Note:
1R225 of old specification cannot be set in place due to the height A of 20mm. If your 1R225 is old one, grind down the height A to 15mm or less using power grinder.

ASSEMBLY

Do the reverse of the disassembling steps.
Note: Make sure that O Ring 39 is mounted to Bearing box of Crank section before assembling Crank section to Crank housing complete. (Fig. 14)

► Repair

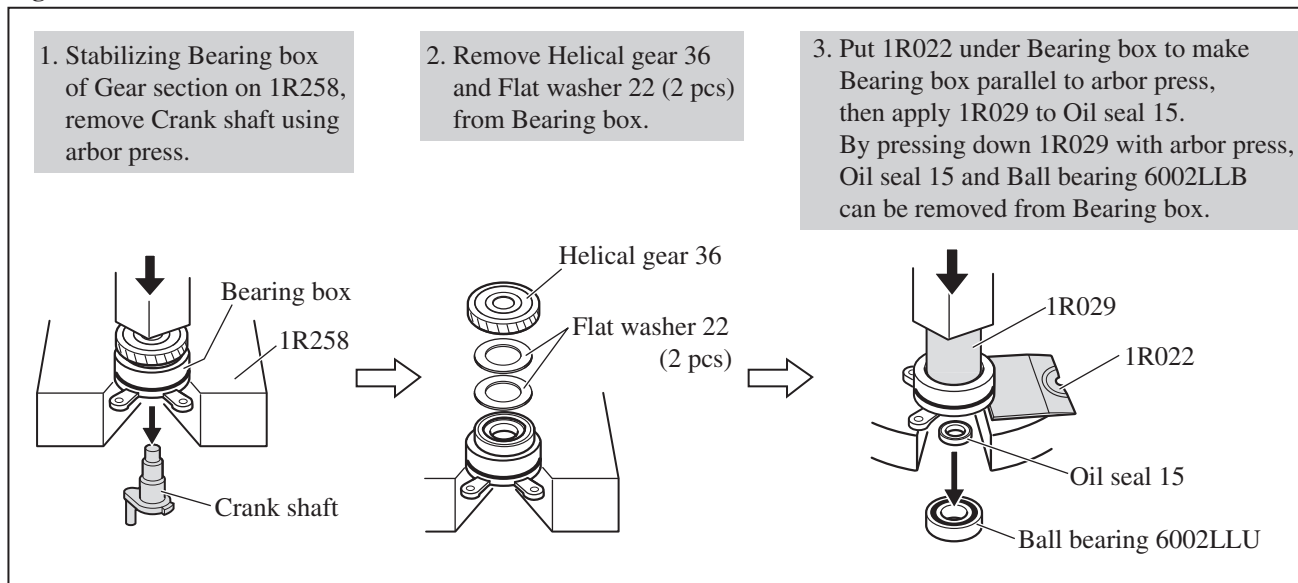
[3] DISASSEMBLY/ASSEMBLY

[3] -5. Gear (Crank) Section

DISASSEMBLY

- 1) Disassemble Gear (Crank) section from Crank housing complete as described in **Figs. 11 - 14**.
- 2) Gear (Crank) section can now be disassembled as described in **Fig. 16**.

Fig. 16



ASSEMBLY

Do the reverse of the disassembling steps.

Note: Make sure that O Ring 39 is mounted to Bearing box of Crank section before assembling Crank section to Crank housing complete. (**Fig. 14**)

► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -6. Handle Section

DISASSEMBLY

Handle section consists of the following main parts: Handle base, Handle, Handle cover

And it can be disassembled as illustrated in **Figs. 17 - 20.**

Fig. 17

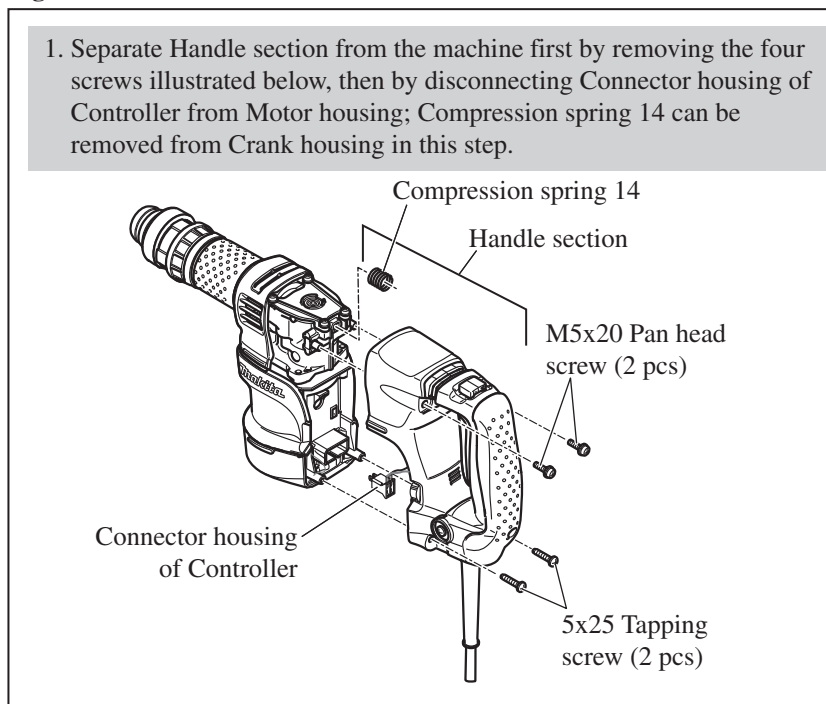


Fig. 18

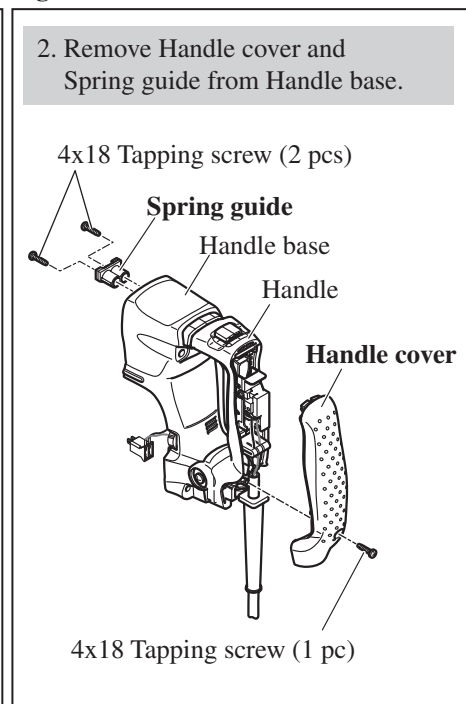


Fig. 19

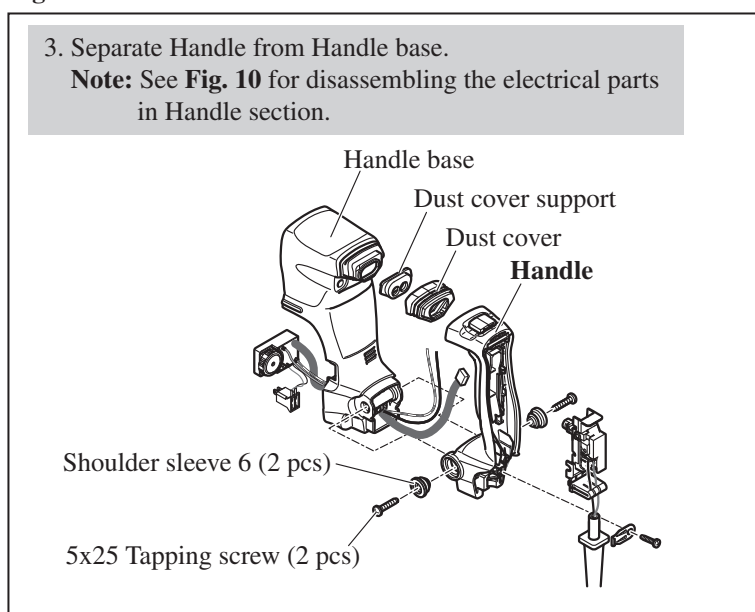
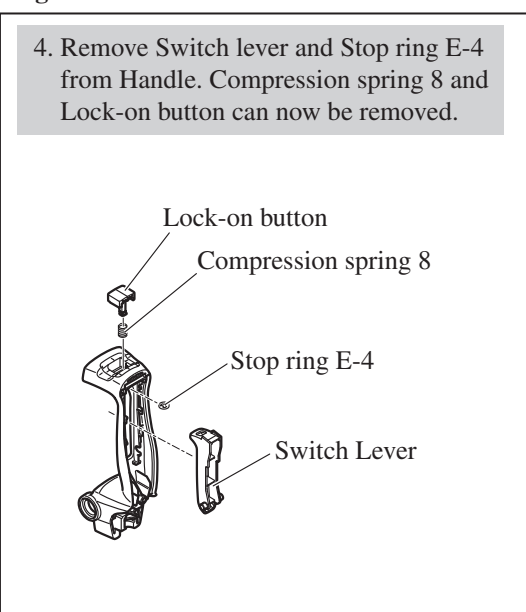


Fig. 20



ASSEMBLY

Do the reverse of the disassembling steps.

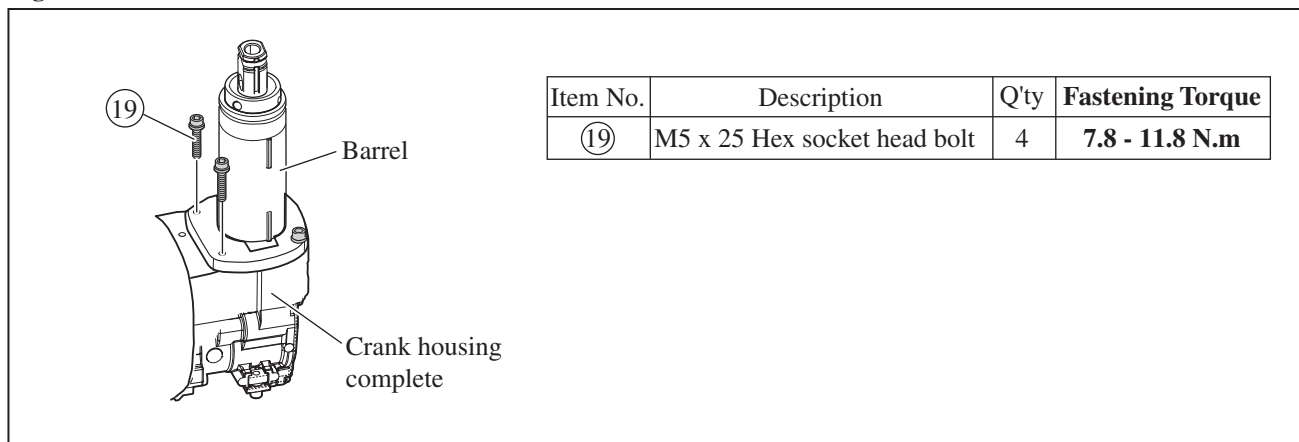
► Repair

[3] DISASSEMBLY/ASSEMBLY

[3] -7. Recommended Fastening Torque of Screws and Bolts

Tighten the bolt to the recommended torque described in **Fig. 21**.

Fig. 21

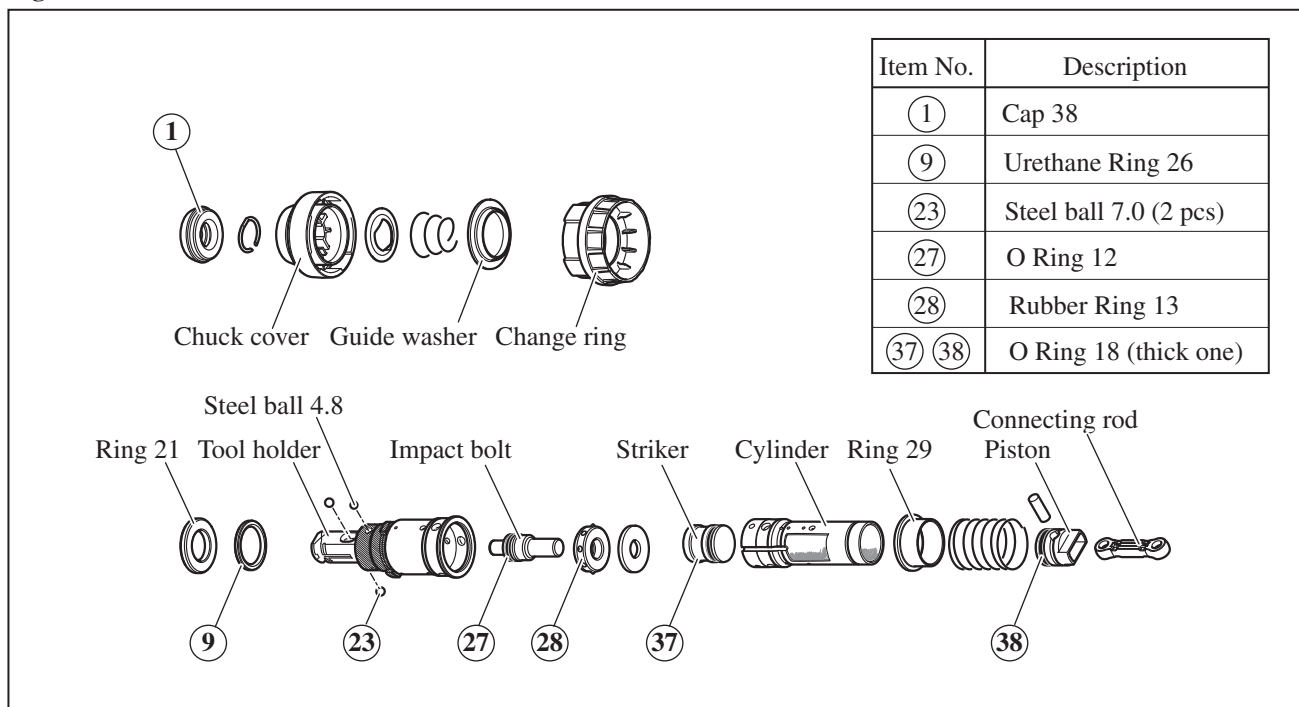


[4] MAINTENANCE PROGRAM

When replacing carbon brush, it is recommended to do the following maintenance at the same time for longer service life of the machine.

- 1) Replace the parts described in **Fig. 22** with new ones.
- 2) Wash out or wipe off old grease in Crank housing complete, and lubricate the parts in accordance with the instructions in [2] LUBRICATION. (Refer to **Fig. 1**.)

Fig. 22



► **Circuit diagram**

Color index of lead wires' sheath					
Black		Red		Clear	
White		Orange			
Blue		Brown			

Fig. D-1A

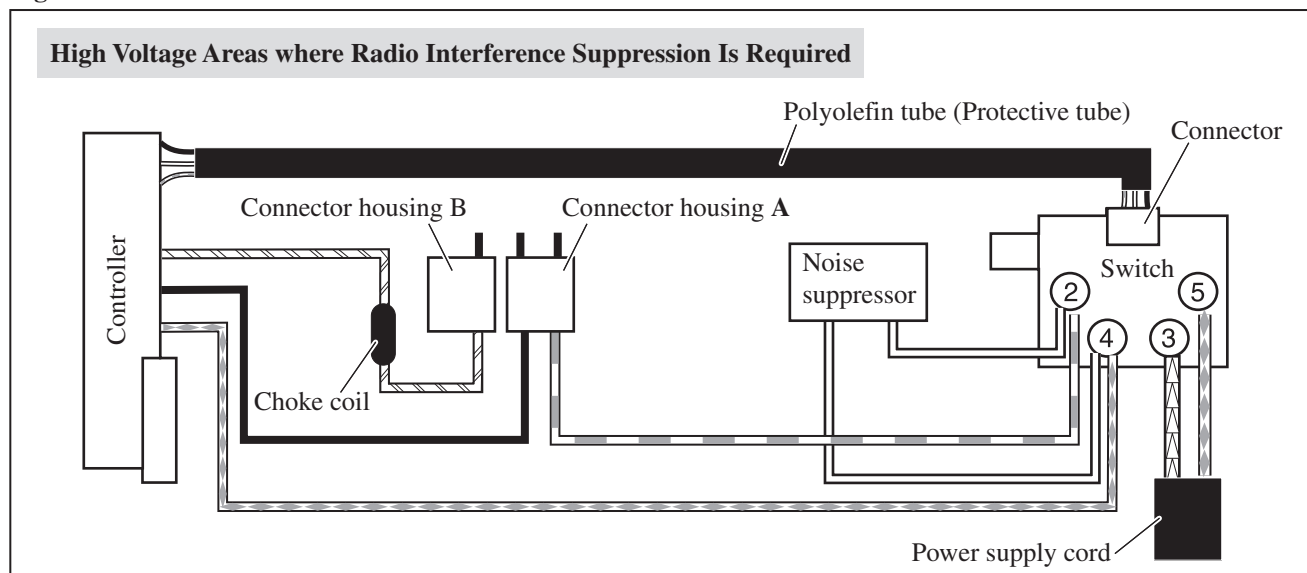


Fig. D-1B

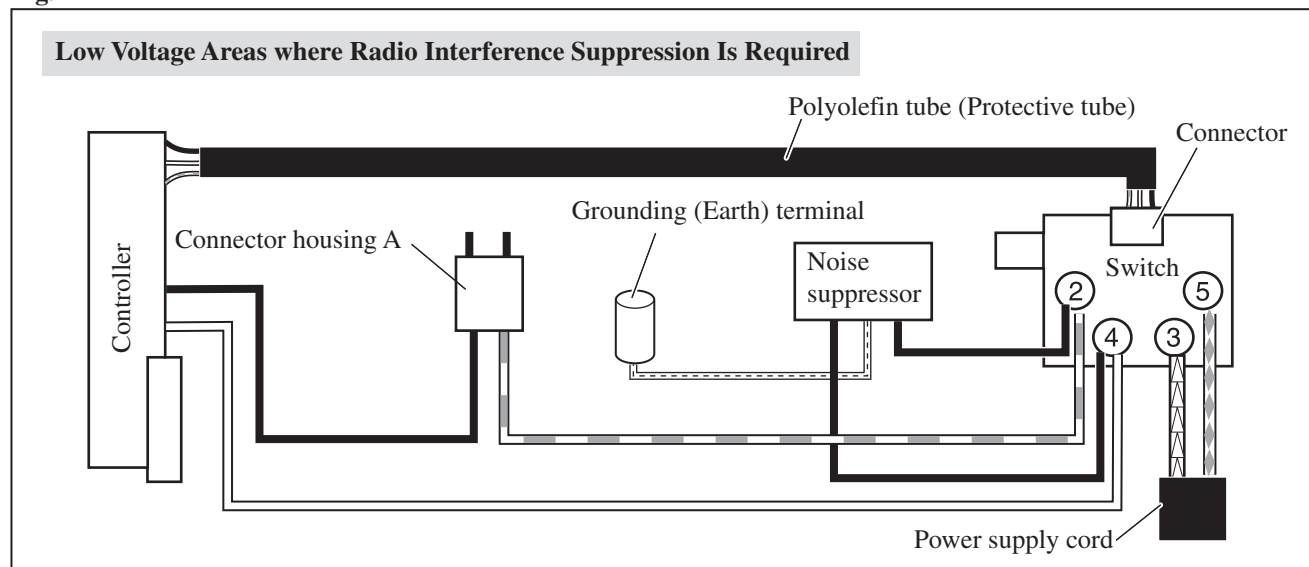
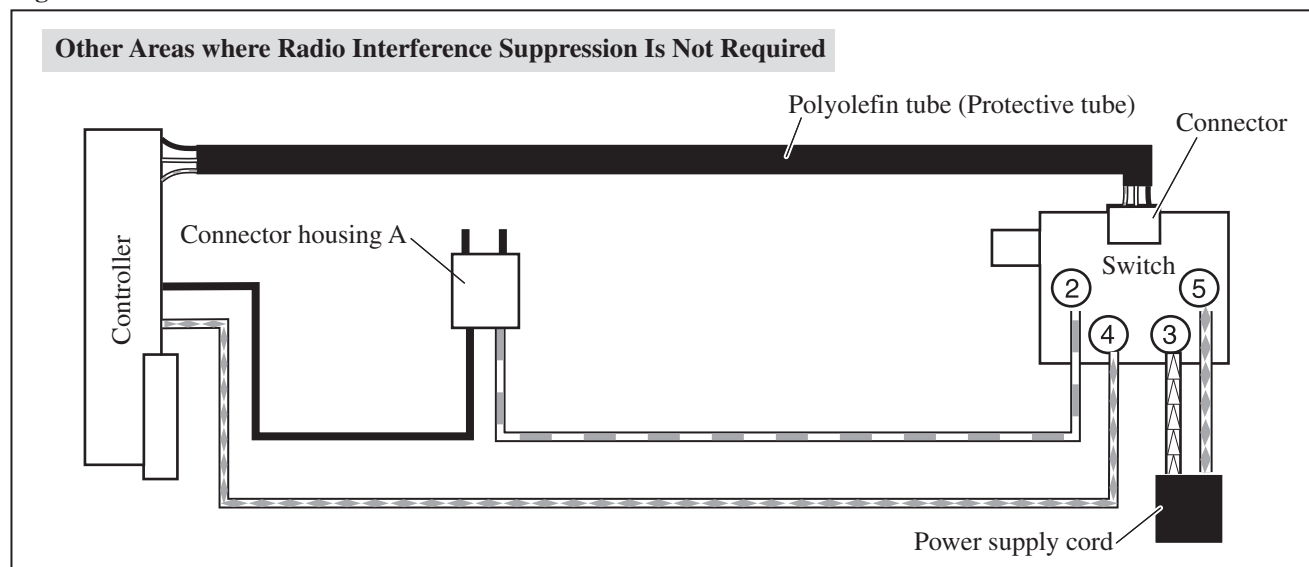


Fig. D-1C



▶ Wiring diagram

[1] Routing Wires Through Handle Base and Handle

Be careful not to pinch the Lead wires with the ribs. (Figs. D-2, D-3)

Fig. D-2

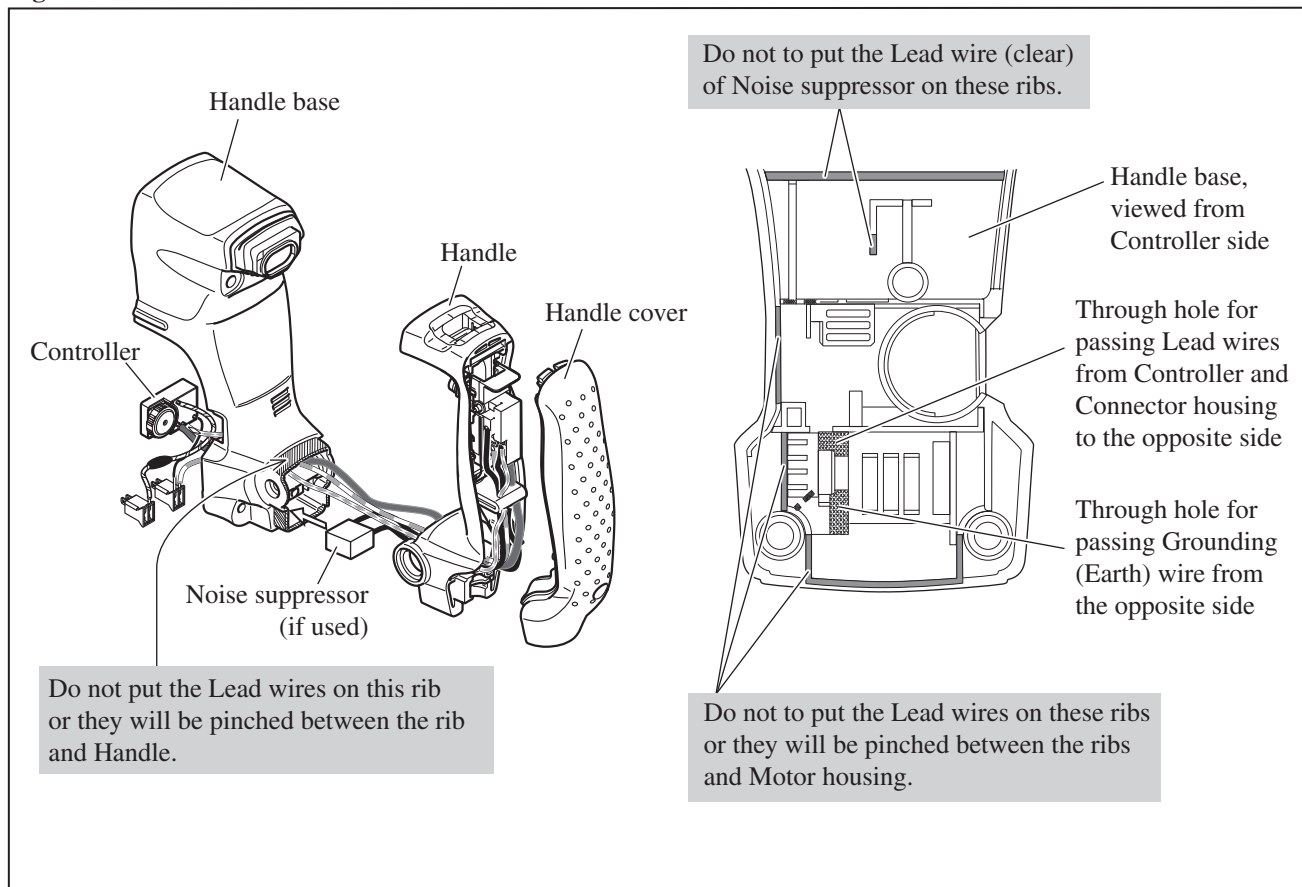
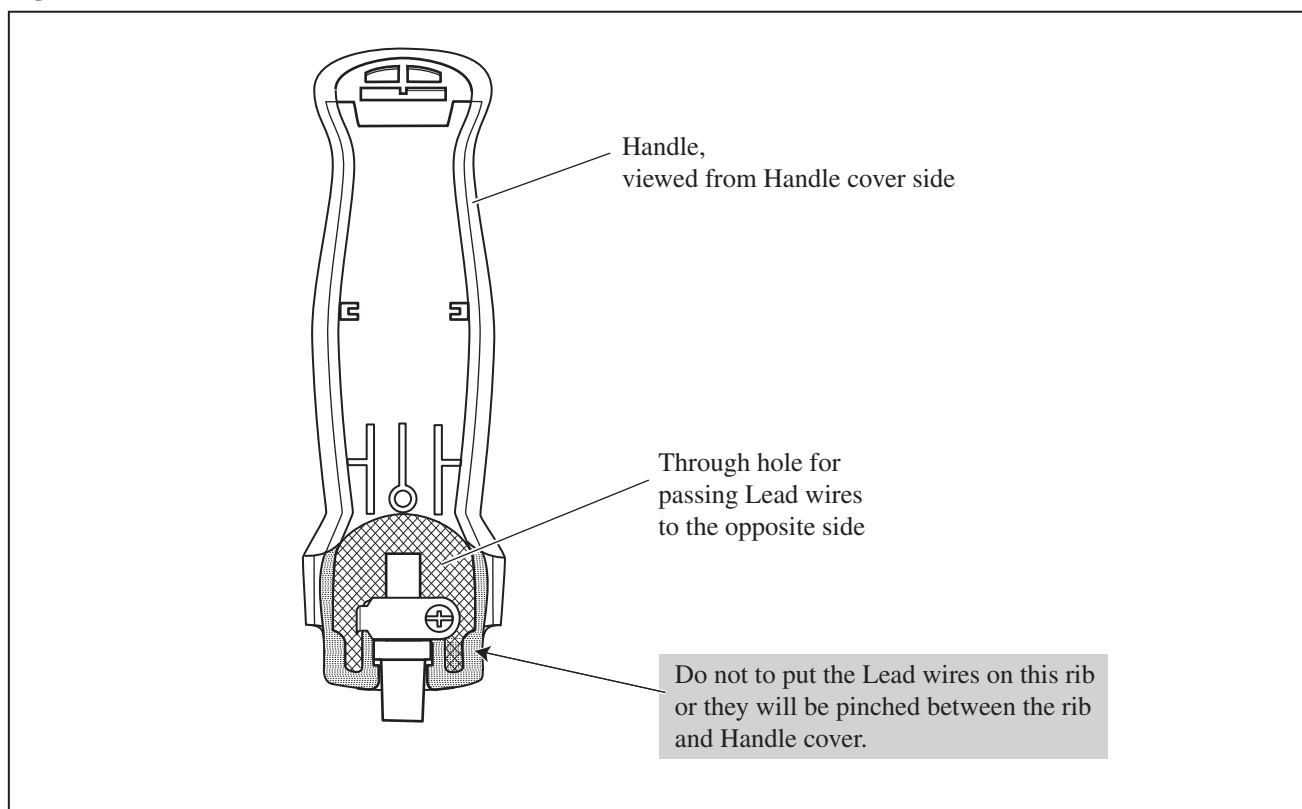


Fig. D-3



▶ Wiring diagram

[2] Wiring in Handle Base and Handle

High Voltage Areas where Radio Interference Suppression Is Required

Fig. D-4A

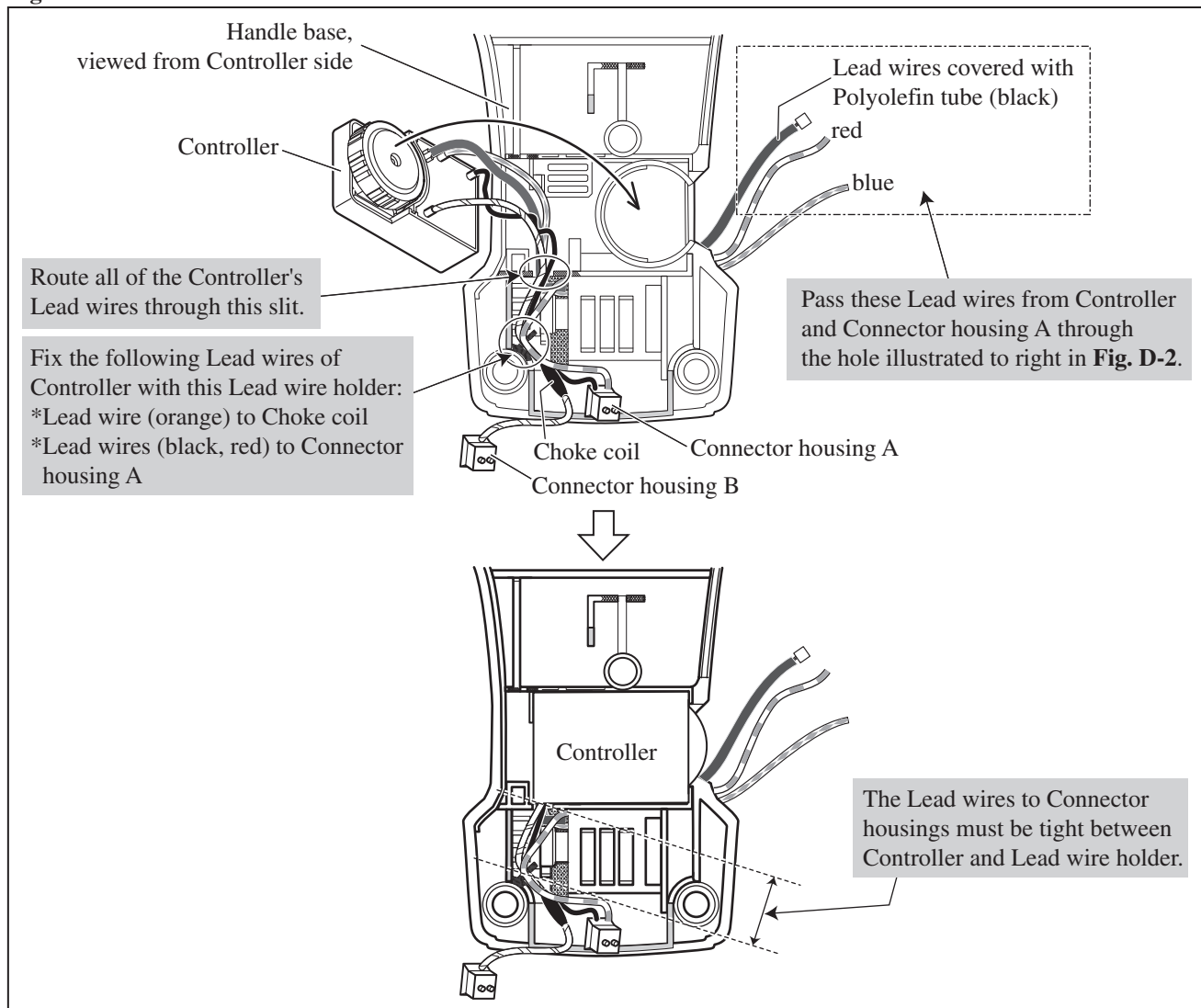
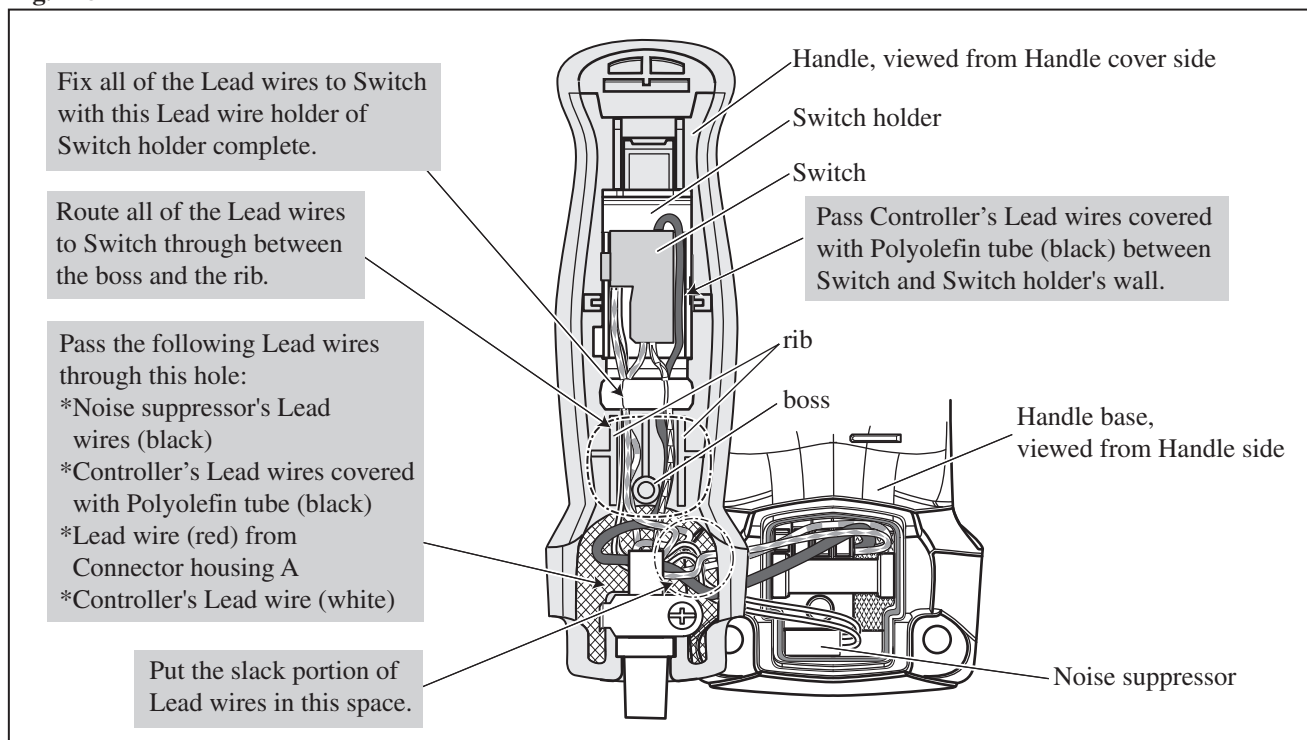


Fig. D-5A



► **Wiring diagram**

[2] Wiring in Handle Base and Handle

Low Voltage Areas where Radio Interference Suppression Is Required

Fig. D-4B

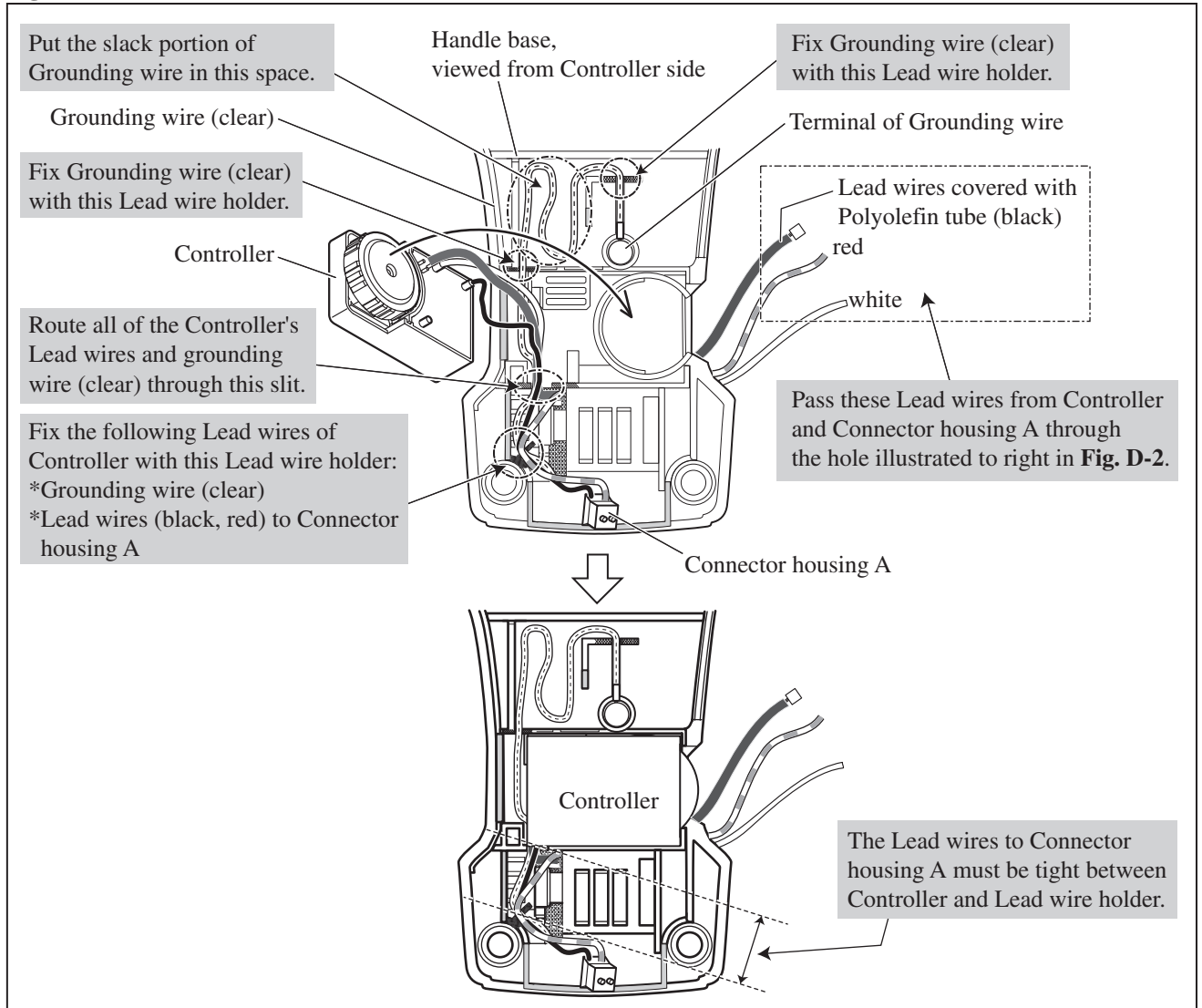
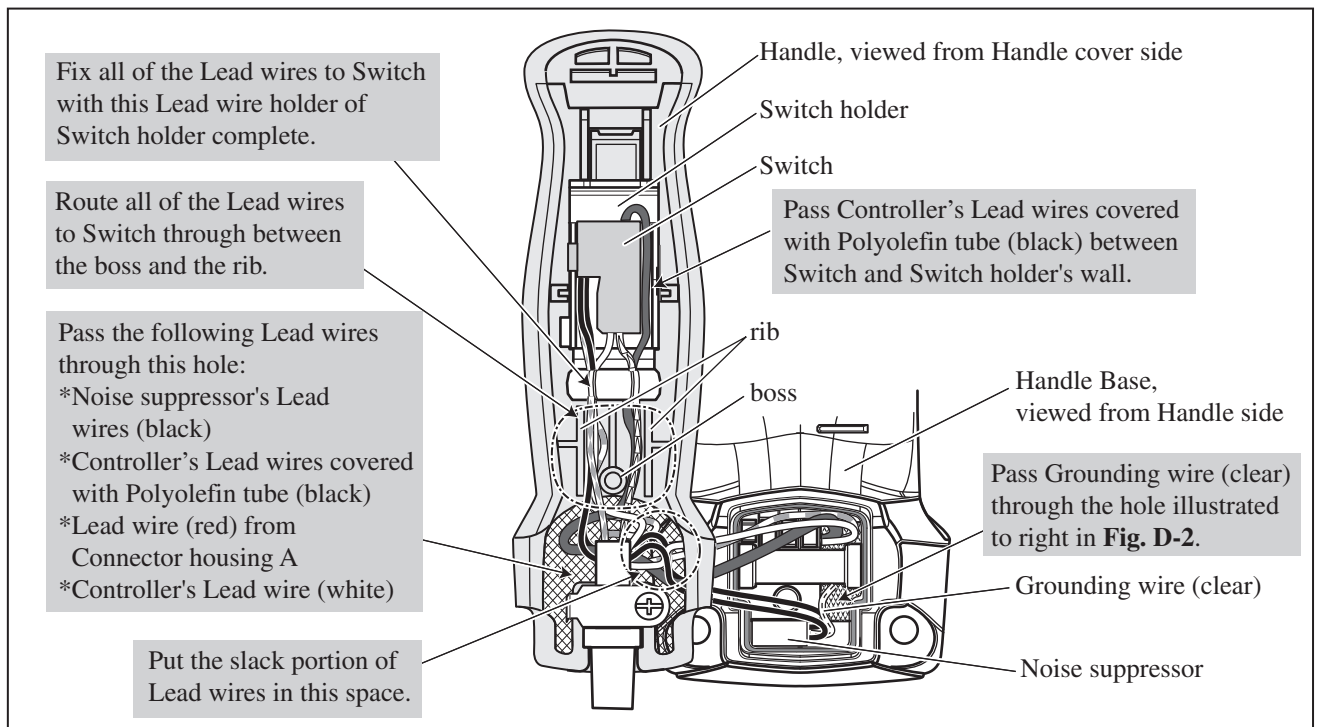


Fig. D-5B



► **Wiring diagram**

[2] Wiring in Handle Base and Handle

Other Areas where Radio Interference Suppression Is Not Required

Fig. D-4C

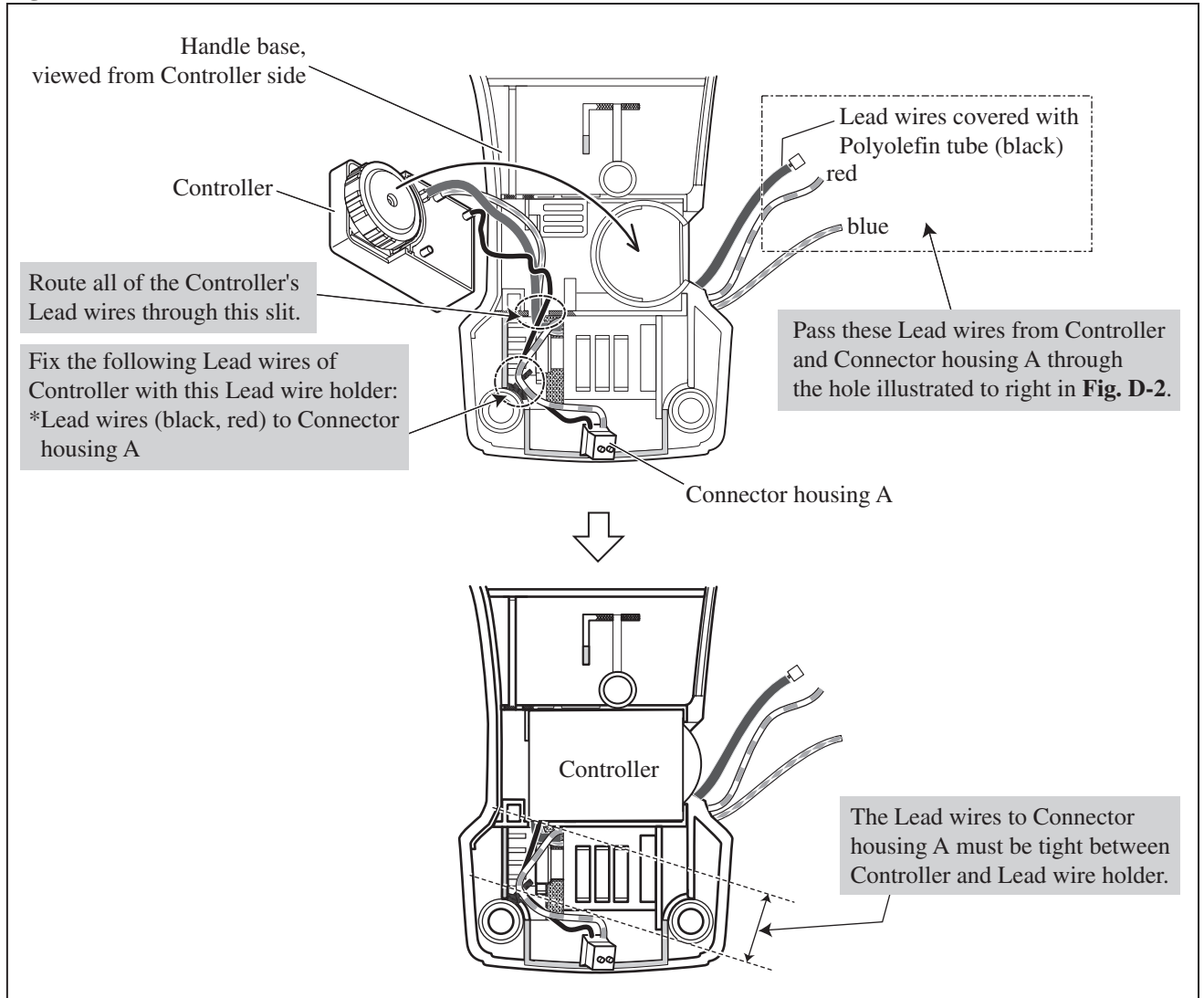
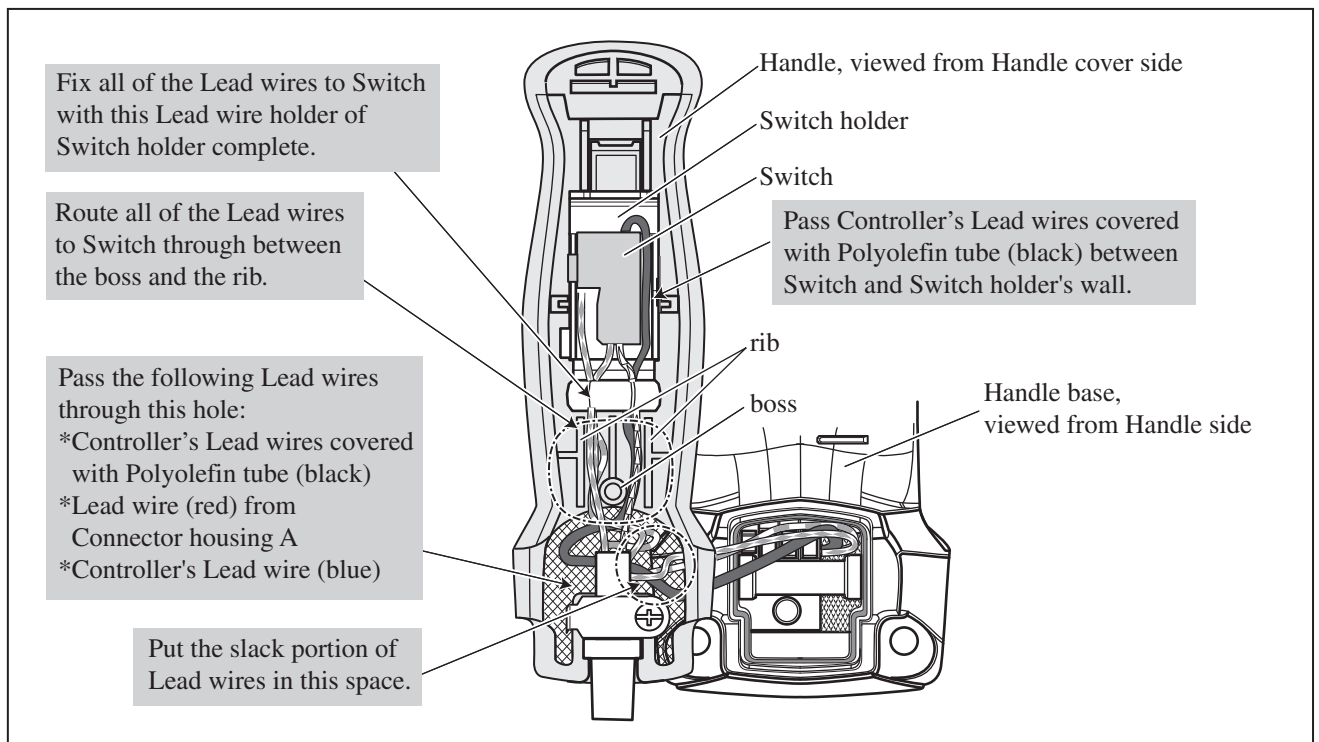


Fig. D-5C



▶ **Wiring diagram**

[3] Connecting Connector Housing with Brush Holder Unit

Connector housing is directional when connected with Brush holder complete in Motor housing.
Be sure to connect as described in **Fig. D-6**.

Fig. D-6

